K Series

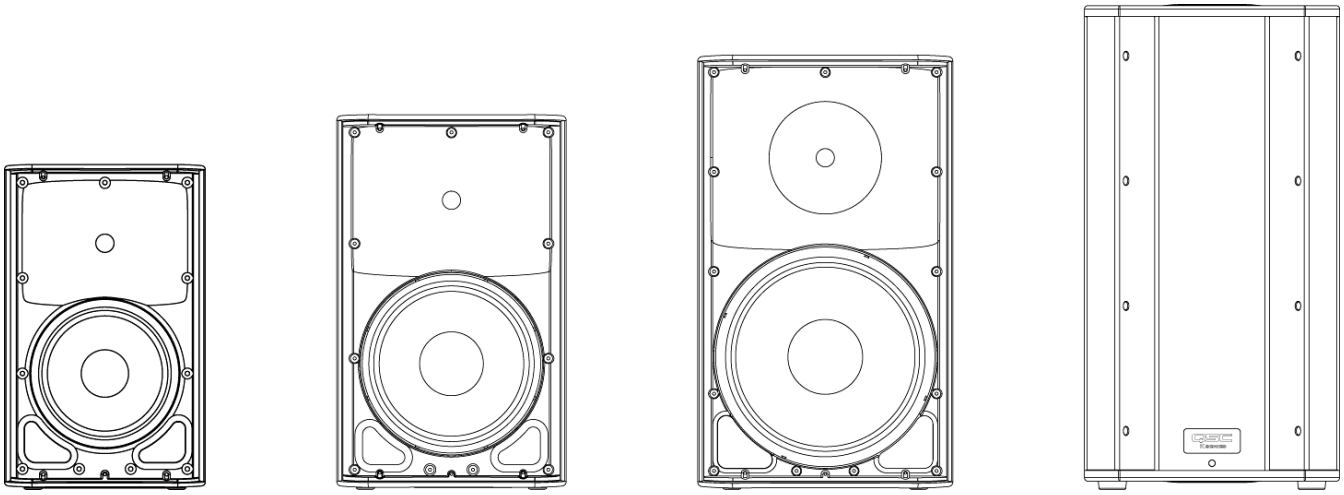
User Manual

K8 – 105° 1000 W active 8" (200 mm) 2-way loudspeaker system

K10 – 90° 1000 W active 10" (250 mm) 2-way loudspeaker system

K12 – 75° 1000 W active 12" (300 mm) 2-way loudspeaker system

KSub – Dual 12" (300 mm) 1000 W active 4th-order bandpass subwoofer system



TD-000280-00-A1

IMPORTANT SAFETY PRECAUTIONS AND EXPLANATION OF SYMBOLS

WARNING!

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE AMPLIFIER COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.

The lightning flash with the arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous" voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of shock to humans.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in this manual.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. WARNING: To prevent fire or electric shock, do not expose this equipment to rain or moisture. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Allow a minimum of 6" (152 mm) clearance behind cabinet for convection cooling. Keep anything that might restrict airflow from the rear of the enclosure (i.e. draperies, fabric, etc.). Do not block any ventilation opening. This product contains an internal power amplifier that produces heat.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the grounding-type plug on the three-pronged "Edison" style power cable. The grounding plug has two blades and a grounding prong. The third prong is provided for your safety. If the provided plug does not fit your outlet, consult an electrician for the replacement of the obsolete outlet. Do not cut off the grounding plug or use an adapter that breaks the grounding circuit. This apparatus must be properly grounded for your safety.
10. Protect the power cord from being walked on or pinched, particularly plugs, convenience receptacles, and the point where they exit from the apparatus.
11. The appliance coupler is the AC mains disconnect and should remain readily operable after installation.
12. Use only attachments/accessories specified by QSC Audio Products, LLC.
13. Use only with hardware, brackets, and components sold with the apparatus or by QSC Audio Products, LLC.
14. Unplug the apparatus during lightning storms or when unused for long periods of time.
15. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally or has been dropped.
16. Before placing, installing, rigging or suspending any loudspeaker product, inspect all hardware, suspension, cabinets, transducers, brackets and associated equipment for damage. Any missing, corroded, deformed, or non-load rated component could significantly reduce the strength of the installation and should be immediately corrected. Use only hardware which is rated for the loading conditions of the installation and any possible short-term unexpected overloading. Never exceed the rating of the hardware or equipment.
17. Consult a licensed, professional engineer when any doubt or questions arise regarding a physical equipment installation.
18. The appliance shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.

Warranty (USA only; other countries, see your dealer or distributor)

QSC Audio Products 3 Year Limited Warranty

QSC Audio Products, LLC ("QSC") guarantees its products to be free from defective material and/or workmanship for a period of three (3) years from the date of sale and will replace defective parts and repair malfunctioning products under this warranty when the defect occurs under normal installation and use – provided the unit is returned to our factory or one of our authorized service stations via prepaid transportation with a copy of proof of purchase (i.e., sales receipt). This warranty provides that the examination of the returned product must indicate, in our judgement, a manufacturing defect. This warranty does not extend to any product which has been subjected to misuse, neglect, accident, improper installation, or where the date code has been removed or defaced. QSC shall not be liable for incidental and/or consequential damages. This warranty gives you specific legal rights. This limited warranty is freely transferable during the term of the warranty period.

Customer may have additional rights, which vary from state to state.

In the event that this product was manufactured for export and sale outside of the United States or its territories, then this limited warranty shall not apply. Removal of the serial number on this product, or purchase of this product from an unauthorized dealer will void this limited warranty.

Periodically, this warranty is updated. To obtain the most recent version of QSC's warranty statement, please visit www.qscaudio.com.

Contact us at 800-854-4079 or visit our website at www.qscaudio.com.

FCC Statement

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and receiver.

• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

• Consult the dealer or an experienced radio/TV technician for help.

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"QSC" and the QSC logo are registered with the U.S. Patent and Trademark Office.
All trademarks are the property of their respective owners.

Package Contents

K8, K10, K12

(1) Loudspeaker system

(1) Locking NEMA 5-15 power cable

(1) Locking CEE 7/4 power cable

(1) User Manual CD

(1) Wiring hookup diagram

KSub

(1) Subwoofer system

(1) Locking NEMA 5-15 power cable

(1) Locking CEE 7/4 power cable

(1) User Manual CD

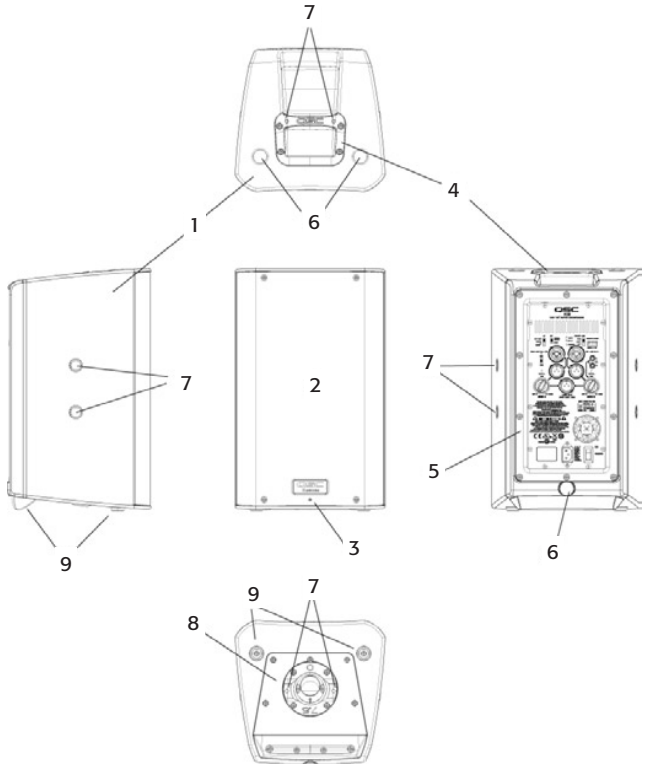
(1) Wiring hookup diagram

(1) M20 threaded loudspeaker pole

Features

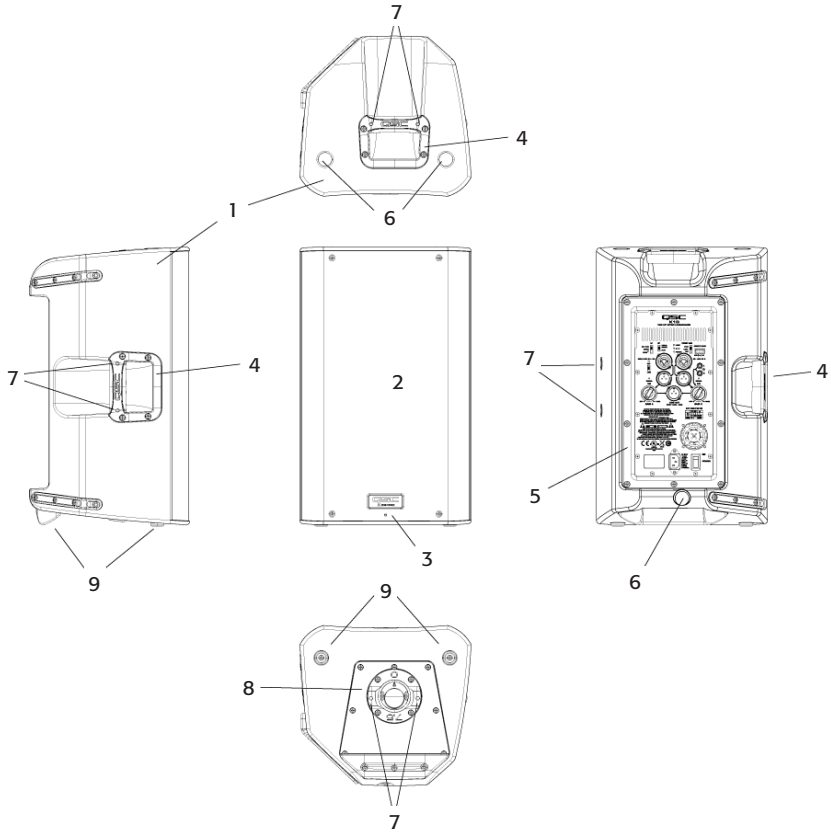
K8

1. ABS enclosure
2. Steel grille
3. Front power LED
4. Cast aluminum handles
5. Power module
6. M10 installation points
7. M5 yoke attachment points
8. Tilt-Direct™ dual angle pole socket
9. Slip-resistant feet



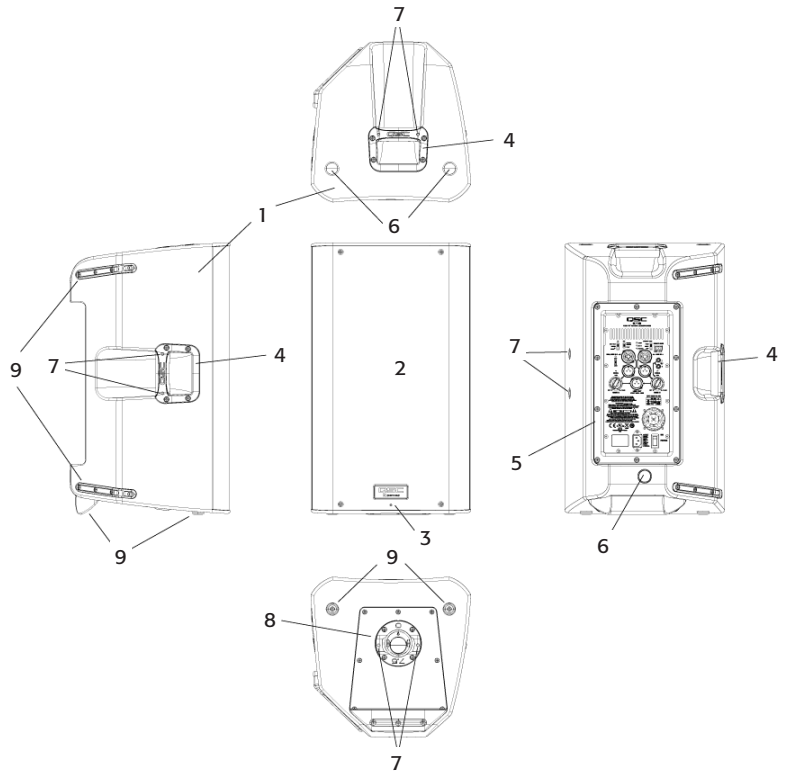
K10

1. ABS enclosure
2. Steel grille
3. Front power LED
4. Cast aluminum handles
5. Power module
6. M10 installation points
7. M5 yoke attachment points
8. Tilt-Direct™ dual angle pole socket
9. Slip-resistant feet



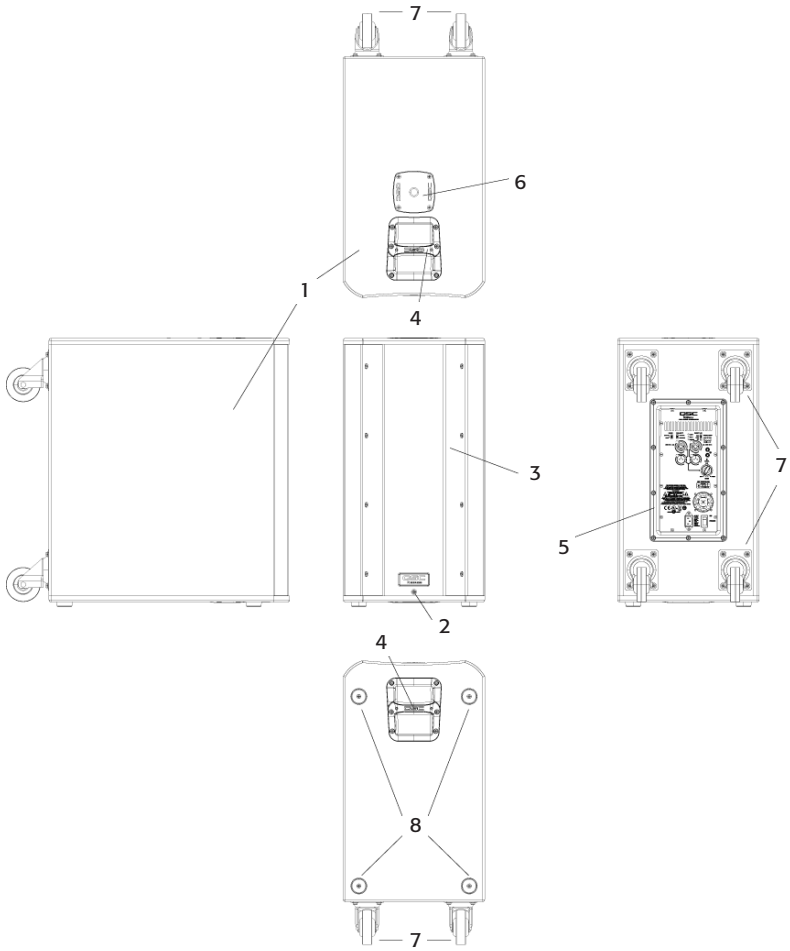
K12

1. ABS enclosure
2. Steel grille
3. Front power LED
4. Cast aluminum handles
5. Power module
6. M10 installation points
7. M5 yoke attachment points
8. Tilt-Direct™ dual angle pole socket
9. Slip-resistant feet



KSub

1. Birch plywood enclosure
2. Front power LED
3. Acoustic port
4. Cast aluminum handles
5. Power module
6. M20 threaded pole receptacle
7. 3" heavy duty casters
8. Slip-resistant feet



Applications

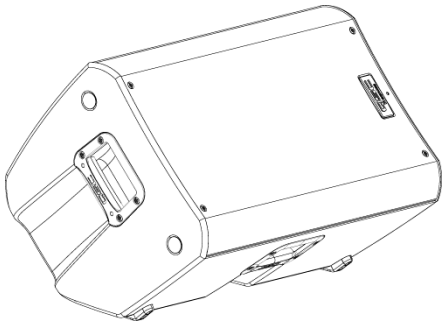
The K Series has been primarily designed for portable audio reinforcement. This includes a variety of uses in reinforcement for entertainers and presenters. The K8, K10 and K12 are all designed to perform well on their own in full-range audio. They can be used singly, in stereo pairs or in distributed or delayed systems. They perform extraordinarily well as both main reinforcement systems and as floor monitors (K10 and K12 only). (Figure 1)

The K8, K10, and K12 are all equipped with a 35 mm pole socket that allows use on a speaker stand or on a pole over a subwoofer. The pole socket features the QSC Patented Tilt-Direct™ system for tilting the enclosures down 7.5 degrees while on the pole. (Figure 2)

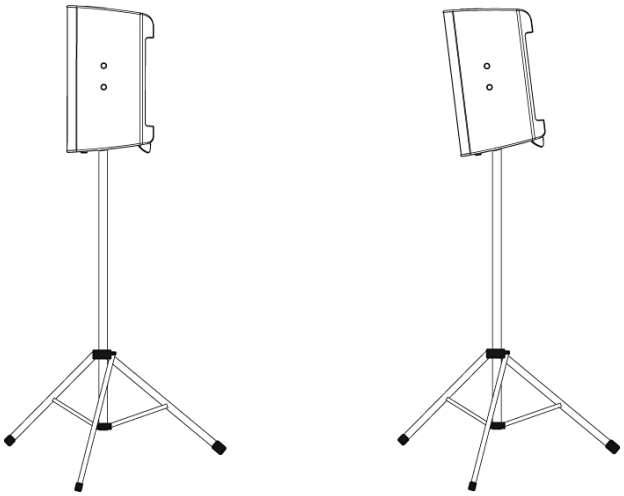
The K8, K10 and K12 also have features designed for various suspension methods. They feature M10 threaded inserts for suspension with eyebolts. There are also yoke accessories (model numbers: K8 YOKE, K10 YOKE, K12 YOKE) for each model that can mount either to the sides of the cabinet or to the top and bottom. These yokes allow for rigid mounting to structures and rotation of the speaker system. (Figure 3)

For extra low-frequency extension and enhancement, the KSub is perfectly matched to the rest of the K Series. The K8, K10 and K12 all have a selectable high-pass filter for use with the subwoofer. The KSub includes a fixed low-pass filter so it will accept full-range input.

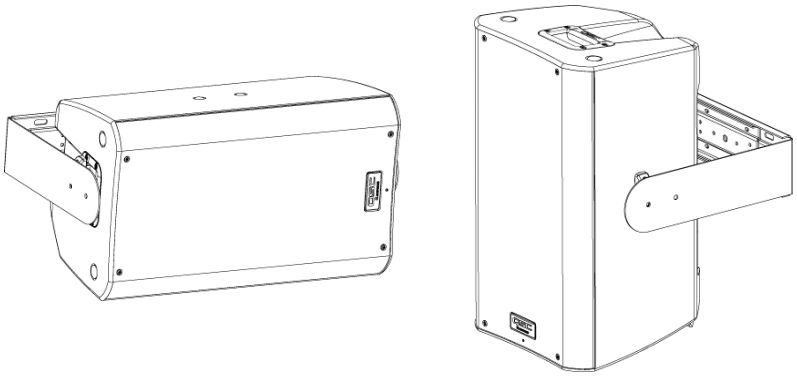
The KSub has four large casters for maximum portability. The pole socket on the top of the enclosure is fitted with an M20 threaded insert. The included speaker pole screws into the socket for a secure fit. (Figure 4)



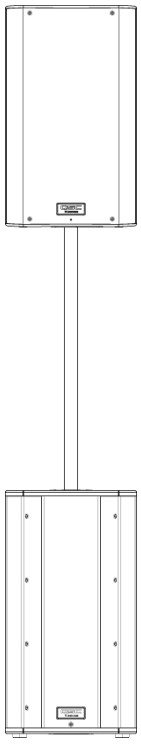
– Figure 1 –



– Figure 2 –



– Figure 3 –



– Figure 4 –

Installation

Before placing, installing, rigging, or suspending any speaker product, inspect all hardware, suspension, cabinets, transducers, brackets and associated equipment for damage. Any missing, corroded, deformed, or non-load rated component could significantly reduce the strength of the installation or placement. Any such condition severely reduces the safety of the installation and should be immediately corrected. Use only hardware which is rated for the loading conditions of the installation and any possible short-term, unexpected overloading.

Never exceed the rating of the hardware or equipment.

Consult a licensed, professional engineer regarding physical equipment installation. Ensure that all local, state and national regulations regarding the safety and operation of loudspeakers and related equipment are understood and adhered to.

Recommended Deployment

K8: The K8 was designed to sit on the floor, stage, subwoofer enclosure, be suspended, or be pole mounted on a 35 mm diameter loudspeaker support pole. When pole-mounted to the KSub, pole length must not exceed 31 inch (787 mm).

K10: The K10 was designed to sit on the floor, stage, subwoofer enclosure, be suspended, or be pole mounted on a 35 mm diameter loudspeaker support pole. When pole-mounted to the KSub, pole length must not exceed 28.5 inch (724 mm).

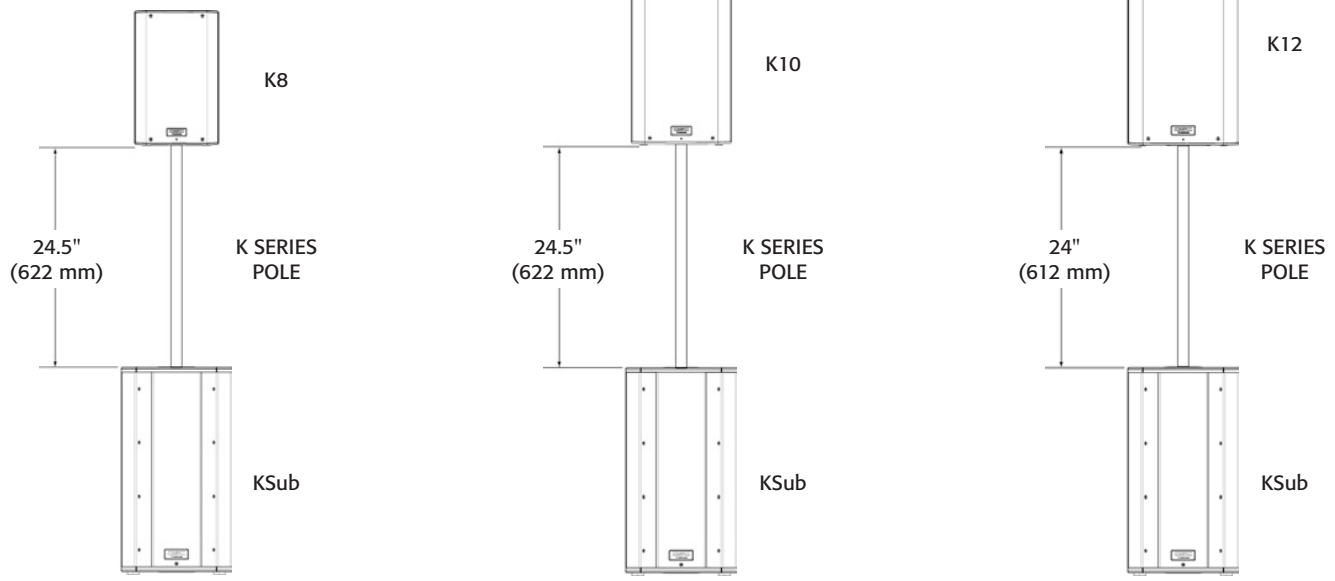
K12: The K12 was designed to sit on the floor, stage, subwoofer enclosure, be suspended, or be pole mounted on a 35 mm diameter loudspeaker support pole. When pole-mounted to the KSub, pole length must not exceed 26.5 inch (673 mm).

KSub: The KSub was designed to sit on the floor or on the stage. A threaded pole cup on the top of the enclosure accepts a M20 threaded 35 mm loudspeaker mounting pole. There are additional M20 speaker poles available from third party suppliers. Rubber feet on the enclosure's bottom help to minimize enclosure movement during operation. Do not pole mount or stack more than one enclosure on top of the KSub enclosure. As the casters will wear during normal use, it may be required to insert small foam pieces between the wheels and frames to minimize rattling at high output levels.

K8 WARNING! Do not use a loudspeaker support pole longer than 31 inch (787 mm) when supported by the KSub subwoofer.

K10 WARNING! Do not use a loudspeaker support pole longer than 28.5 inch (724 mm) when supported by the KSub subwoofer.

K12 WARNING! Do not use a loudspeaker support pole longer than 26.5 inch (673 mm) when supported by the KSub subwoofer.

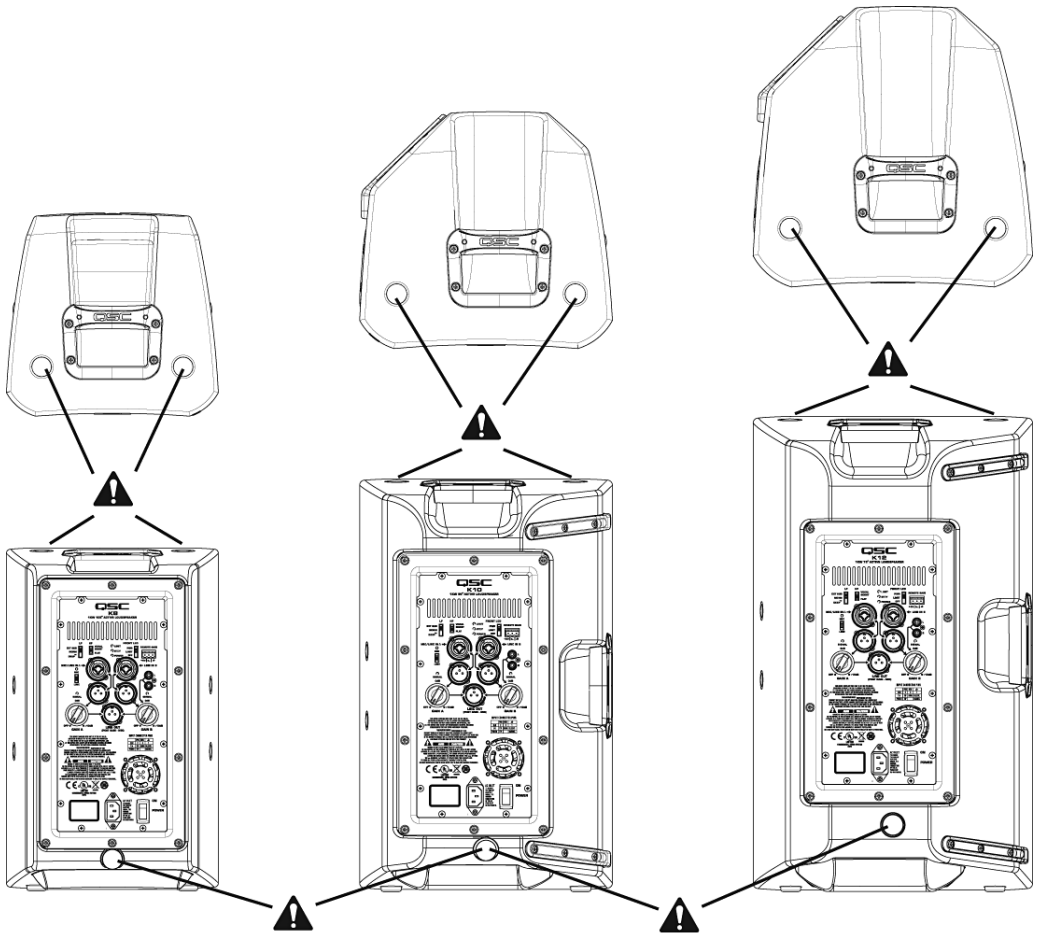


Integrated Suspension Points (suspended installations)

The K8, K10 and K12 enclosures each feature three load-rated M10 installation points.

As shipped from the factory, each pick point has a rubber plug installed to retain the sleek look of the enclosure. These installation points are designed for use with the eyebolts included in the available accessory kit, model number K SERIES M10 KIT. The installation points may also be used with any forged shoulder eyebolt with an M10 thread, provided the length of the thread is no more than 0.8 inch (20 mm).

Ensure all pick-point fasteners are installed and correctly tightened in order to maintain enclosure's rated strength. Use either QSC's M10 forged shoulder eye bolts contained in K SERIES M10 KIT or an M10 forged shoulder eyebolt with a thread length no more than 0.8 inch (20 mm). Contact QSC Technical Services department for complete information.



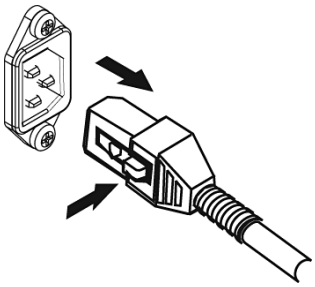
K8 K10 K12

Cooling in Installed Applications

This is a self-powered loudspeaker containing an internal power amplifier that produces heat. Allow a minimum of 6" (152 mm) clearance at cabinet back for convection cooling. Keep anything that might restrict airflow away from the rear of the enclosure (i.e draperies, fabric, etc...).

Do not install enclosures with their rear panels exposed to direct sunlight. Direct sunlight will heat the amplifier module and reduce its ability to produce full output. Install sunshades if the application merits. Maximum ambient temperature for full performance to specification is 50° C (122° F). Do not install enclosures where exposed to rain or other water sources. The enclosure is not weatherproof. Outdoor installations must provide protection from the elements.

AC Mains



Connect AC power to the IEC socket on the back of the amplifier by locating the IEC connector-end of the AC power cord and inserting it fully into the IEC inlet on the power amplifier module. **NOTE:** Turn off the AC power switch before connecting AC power.

The V-LOCK power cord has a special latching feature to prevent the power cord from being unintentionally removed. The IEC plug and socket are both blue in color so the power cord can be identified as a K Series loudspeaker cord. If the QSC supplied cord becomes lost or damaged, a standard replacement 18 gauge IEC power cord may be used. However, the latching system will only function with a V-LOCK power cord available from QSC Audio Products, LLC.

The K Series is fed by a universal power supply. This power supply is capable of operating the system with input AC power voltages ranging from 85 VAC to 265 VAC at 50 – 60 Hz. There are multiple power cables supplied for this reason.

Use only the power cable that is correct for your location.

You may discard any other power cables, find an appropriate recycling opportunity or keep them if travel to other regions with the K Series product is likely.

AC Mains Disconnection

Turn the AC power switch to the off position. To remove the AC mains cord, grasp the IEC connector's plastic body, press the yellow latch release button and pull, removing the connector from the socket.

Power Switch

Push in on the top of the rocker switch to apply AC mains power to the powered loudspeaker. Push in on the bottom of the rocker switch to turn the powered loudspeaker off.

When turned on, the green STANDBY indicator LED and the red LIMIT (limiter) indicator LED on the rear panel will illuminate; after a few seconds the red LIMIT indicator and the green STANDBY will extinguish, and the blue POWER indicator LED will illuminate.

Rear LED POWER Indicator

The blue LED POWER indicator on the rear panel will illuminate when the AC Power switch is in the "ON" position, the unit is not in standby, the AC mains power cord is connected properly, and the AC mains are functioning properly. The rear LED POWER indicator will extinguish when the AC Power switch is in the "off" position, AC mains power has been removed from the loudspeaker, or the amplifier enters standby.

If the rear LED POWER indicator does not illuminate when the Power switch is placed in the "on" position during the first 5 minutes of power being applied, verify the AC mains line cord is properly attached to the loudspeaker and plugged into the AC outlet. Verify the outlet is functioning properly.

If the AC mains cordset is serviceable and the AC mains outlet is operating properly, but the loudspeaker fails to operate, the loudspeaker may require servicing. Contact QSC's Technical Services department.

System Power Sequencing

Proper power turn on/turn off sequencing can help to prevent unexpected sounds from being produced by the system (pops, clicks, thumps). These unintended sounds can be unpleasant and take away from the overall professionalism of the presentation. Always follow the rule that speakers are "last on, first off".

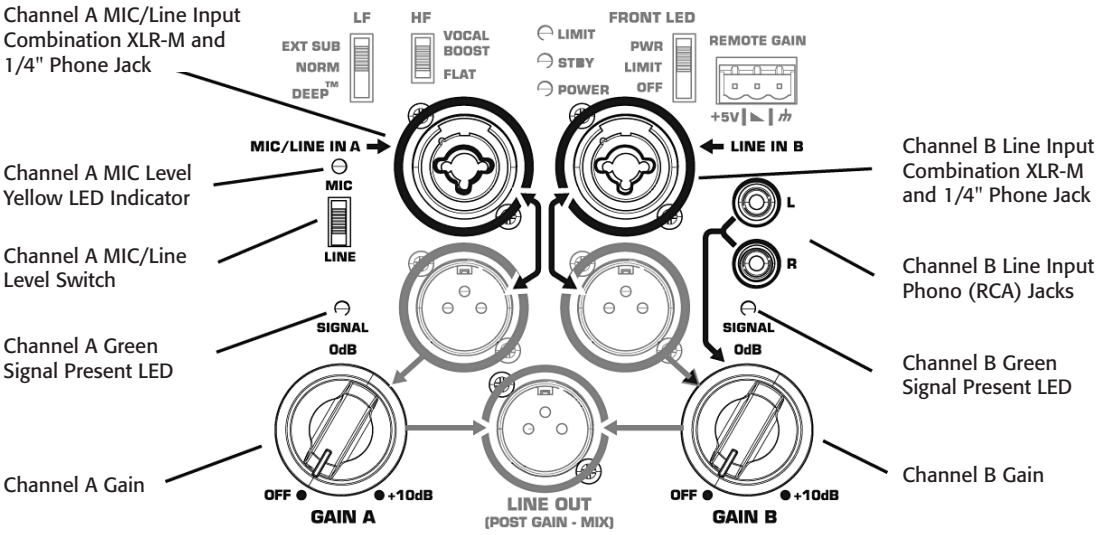
Power On Sequence: Bring the output level control of the mixer (or other audio source) feeding your speakers to its minimum position. Turn on all source devices (CD players, mixers, instruments), turn on subwoofer, then turn on the "top-boxes" (K8, K10, K12). The level controls on your mixer may now be brought up.

Power Off Sequence: Turn off "top boxes," turn off subwoofer, then turn off all source devices.

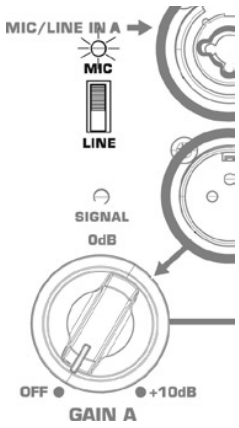
If a K Series speaker is being driven from the output of another K Series unit, it should be turned on after the unit feeding it signal, and turned off before the unit feeding signal.

Input Connections

K8, K10, K12



The K8, K10 and K12 are designed to accept MIC Level and Line Level inputs with several different connectors. There are three input connection points on the input panel. Channel A will accept MIC or Line Level inputs by connecting a male XLR cable or a male 1/4" phone cable (either TS or TRS type may be used). For MIC Level, the MIC/LINE selector switch must be in the "MIC" position. (Figure 5) When the selector switch is in the MIC position, activating the MIC Pre-amp, the yellow MIC level LED indicator will turn on. The MIC setting should only be used if a microphone is connected directly to the MIC/LINE input. Note that the input does not provide phantom power. The LINE setting should be used for most other audio inputs. (Figure 6)



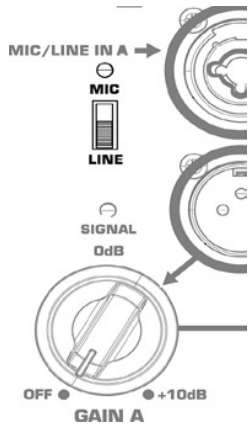
– Figure 5 –

The MIC setting should only be used if a microphone is connected directly to the MIC/LINE input. Using the MIC setting for other purposes may introduce distortion. Care should be taken when switching to the MIC position as the output level will increase significantly when the switch is flipped.

Gain for signal delivered on the Channel A XLR/1/4" combination jack is set using the Channel A Gain knob. This control sets the sensitivity of Channel A, and thereby the amount of signal sent to the power amplifier and, in turn to the loudspeaker components. It also sets the amount of signal sent to the Post-Gain Line Output. The green SIGNAL LED will illuminate when signal is present, regardless of the amount of gain as set by the Gain knob. If the LED does not illuminate, the input is not receiving any signal or the level of the signal is significantly low. Check all connections and the status of the device delivering the signal.

Channel B will accept Line Level input only, by connecting a male XLR cable or a male 1/4" phone cable (either TS or TRS type may be used). Channel B will also accept mono or stereo Line Level input on a pair of RCA (phono) jacks.*

Gain for signal delivered on the Channel B line level XLR/1/4" combination jack and RCA (phono) jacks is set using the Channel B Gain knob. The Channel B Gain knob will control the input gain of Channel B, as well as the amount of signal sent to the Post-Gain Line Output. The green SIGNAL LED will illuminate when signal is present, regardless of the amount of gain as set by the Gain knob. If the LED does not illuminate, the input is not receiving any signal, or the level of the signal is significantly low. Check all connections and the status of the device delivering the signal.

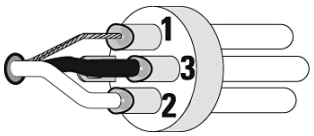


– Figure 6 –

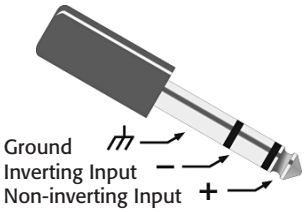
Note: Unless the gain controls associated with all active inputs are set to 0 dB, the output signal from the Post-Gain Line Output will not be at the same level as the input signal. If a "slave" speaker is intended to playback at the same level as the "master" speaker, the gain control on the "slave" speaker should be set to 0 dB.

**Stereo input received at the RCA input jacks will be summed to mono.*

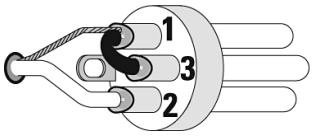
Balanced Inputs: Connect to the plug as shown.



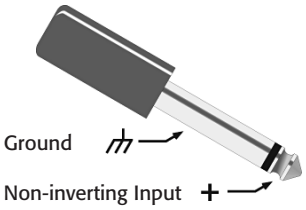
1 = Shield (ground)
3 = Minus (-)
2 = Plus (+)



Unbalanced Inputs: Connect to the plug as shown. If a 3 conductor (TRS) plug is used to connect an unbalanced source, Pin 3 and pin 1 must be connected with a jumper as shown.

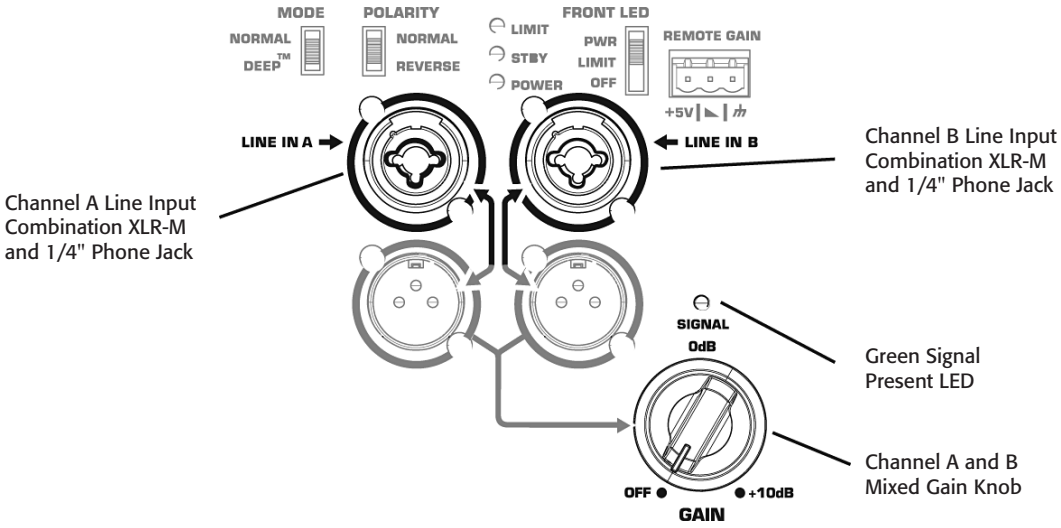


1 = Shield (ground)
3 = Minus (-)
2 = Plus (+)



Input Connections

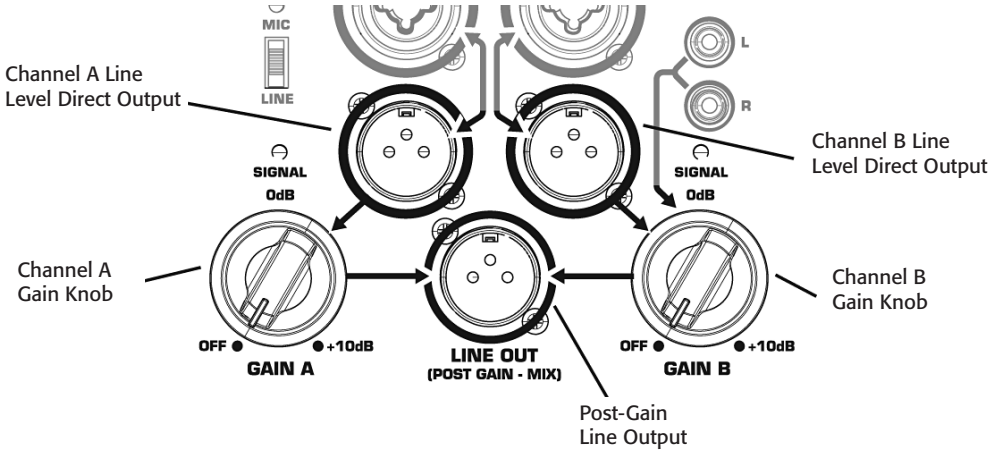
KSub



The KSub is designed to accept Line Level inputs connected either by male XLR or 1/4" phone (TS or TRS) jack. If signal is connected to both Channel A and Channel B, they will be summed together. The gain of the summed signal is then controlled using the Gain knob. This affects the amount of signal sent to the amplifier and then to the loudspeaker components. The green SIGNAL LED will illuminate when signal is present, regardless of the amount of gain as set by the Gain knob. If the LED does not illuminate, the input is not receiving any signal, or the level of the signal is significantly low. Check all connections and the status of the device delivering the signal.

Output Connections

K8, K10, K12



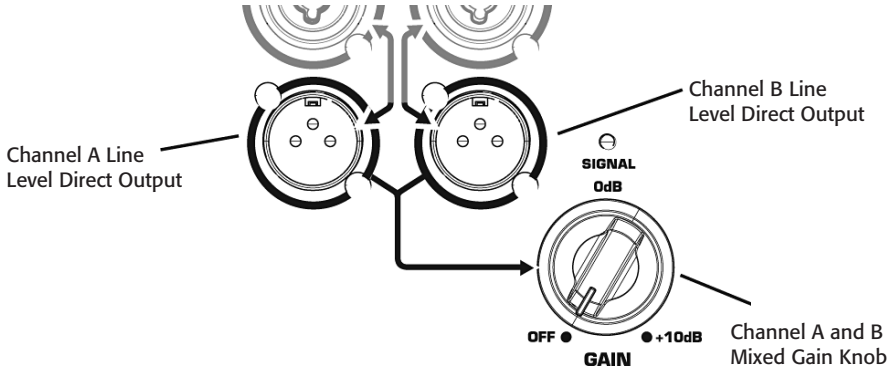
Both Channel A and Channel B have discreet direct outputs on female XLR connectors. The signal on this output is exactly equivalent to the signal from the corresponding input. The level of the output signal is not affected by the gain setting for that channel. Additionally, signal delivered on the RCA (phono) jacks is not present on the Channel B direct line level output.

The Post-Gain Line out female XLR connector is a mixed output of Channel A, Channel B and the RCA (phono) jacks. This mix is affected by gain knobs on both Channel A and Channel B and the MIC/LINE switch on Channel A, but the output level is still Line Level.

WARNING! Do not connect the POST-GAIN LINE OUTPUT of a K Series system to any INPUT of the SAME UNIT. This output is designed to send signal to OTHER K Series units or to other audio equipment. Failure to follow this warning may result in very unpleasant sounds produced at extremely high output volumes.

Output Connections

KSub



Both Channel A and Channel B have discrete direct outputs on female XLR connectors. The signal on this output is exactly equivalent to the signal from the corresponding input. The level of the output signal is not affected by the gain set on the subwoofer gain knob.

DSP Features

The K Series features advanced DSP (digital signal processing) circuitry that performs many functions. Some functions are set at the design/production level and are not user accessible. These functions include crossovers, time alignment, limiting and protection, thermal management and a number of proprietary features. QSC has designed exclusive DSP functions that greatly enhance the capabilities and performance of the K Series systems.

Proprietary DSP Functions

Excursion Limiting: In addition to signal limiting to protect the amplifier and transducers from overload, the K Series utilizes a proprietary limiter that prevents woofer over-excursion. Over-excursion occurs when a voltage presented to the woofer causes the cone to physically travel too far. This builds up excessive heat, stresses the moving parts of the woofer, produces audible artifacts and distortion and reduces the woofer's lifespan. The proprietary algorithm contained in Excursion Limiting prevents over-excursion. Voltages that will harm the woofer through over-excursion are reduced enough to prevent over-excursion without any audible compression, limiting or loss.

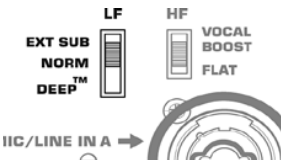
DEEP™: Taking advantage of the Excursion Limiter, the DEEP (Digital Extension and Excursion Processing) algorithm functions as a highly musical and non-distorting low-frequency EQ circuit. More on the DEEP function is available in the EQ section of this manual.

Intrinsic Correction™: Introduced on QSC Concert/Touring products, Intrinsic Correction is a proprietary process and set of signal processing algorithms that address correctable characteristics of transducers and waveguides. The net result is that any K Series system will present extraordinarily even and consistent energy throughout the physical listening area of the loudspeaker, resulting in a very musical, acoustically transparent system.

DSP User Functions

Low-frequency EQ

On the K8, K10 and K12, there are three low-frequency settings. From the factory, the switch is set to "NORM." This means that the loudspeaker system is producing a normal low-frequency signal through the woofer. This is the standard setting for most applications. (Figure 7)

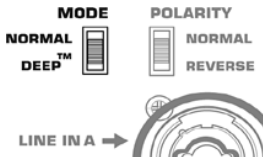


– Figure 7 –

When using one of the top boxes with a subwoofer, the switch should be moved to the "EXT SUB" position to engage the 100 Hz high-pass filter. It is also recommended that the 100 Hz high-pass filter be engaged when using the K10 or K12 as a floor monitor to prevent excessive bass build up on the stage.

For extra low-frequency extension and low-end presence when using one of the top boxes without a sub, move the switch to the "DEEP" setting. This will engage the proprietary DEEP algorithm, providing increased low-frequency extension without causing distortion or woofer over-excursion.

On the KSub there are two low-frequency settings. From the factory, the switch is set to "NORM." This means that the subwoofer system is producing a non-EQ'd low-frequency signal through the woofer. This is the standard setting for most applications. (Figure 8)

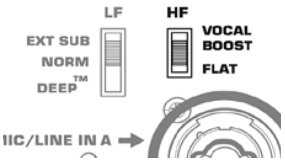


– Figure 8 –

For extra low-frequency extension and low-end presence, move the switch to the "DEEP" setting. This will engage the proprietary DEEP algorithm, providing increased low-frequency extension without causing distortion or woofer over-excursion.

High-frequency EQ

On the K8, K10 and K12 there are two high-frequency settings. From the factory, the switch is set to "FLAT." This means that the loudspeaker system is producing a flat response through the vocal band. This is the standard setting for most applications. (Figure 9)

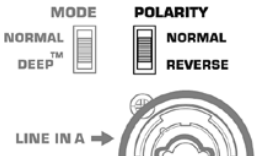


– Figure 9 –

In voice-only reproduction, the switch can be set to the "VOCAL BOOST" setting. This will engage EQ that gives a stronger presence for vocal intelligibility and presence. It is generally not recommended to use this setting when playing full-range music through the system.

Subwoofer Polarity

Polarity (sometimes improperly referred to as phase) refers to the voltage of an input signal and whether it is a positive or negative voltage at any given time. In most cases a positive voltage causes a woofer cone to move forward with respect to the cabinet orientation, and a negative voltage then moves the woofer cone backward. Most importantly, speakers reproducing the same signal or signals that are adjacent in frequency must have the same polarity to get the maximum output. This is most important for low frequencies. Polarity can be altered by incorrect wiring or mixer control settings. (Figure 10)



– Figure 10 –

When using the KSub with K Series full range loudspeakers, NORMAL polarity will result in the best bass response IF the full range loudspeakers are sitting on or very close to the subwoofers. If the subwoofers are some distance away from the full range loudspeakers, polarity change may be of benefit. Start with all subwoofer POLARITY switches in the NORMAL position. Then, with the system at or near expected operating levels, change the polarity of each subwoofer INDIVIDUALLY. Walk around the venue and assess the overall bass response. Select the polarity that results in the best overall system bass response.

When using only one KSub and connecting a LEFT and RIGHT stereo signal, start with the polarity switch in the NORMAL position. With the system at a reasonable level, change the POLARITY switch and evaluate which polarity results in the most low-frequency output.

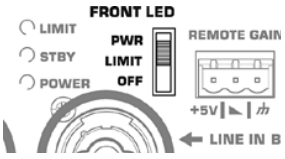
Additional Features

Standby

All K Series models are equipped with an automatic standby feature to conserve energy when the systems are not in use. If no signal is present on any input of a K Series system or the gain knob is turned to off for five minutes, the power amplifier will go into standby and the green STANDBY LED will illuminate. No other LEDs will illuminate when the unit is in standby; this includes both the Rear Power LED and the Front Power LED. In this mode, the amplifier will be powered down. A small amount of voltage will continue to flow from the AC power source into the power supply of the K Series power module. This voltage will keep the power supply and DSP "awake" to reduce turn on time when the system is brought out of standby. The power up time of the amplifier is negligibly small and is shorter than the latency of the DSP, so no signal will be cut off when the K Series system is brought out of standby. A K Series loudspeaker can also be brought out of standby manually by turning the power switch off and then back on.

Front Power LED Functions

The Front Power LED may be set to any of three modes by the rear-mounted Power LED switch. (Figure 11)

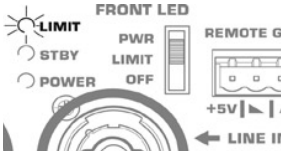


– Figure 11 –

- From the factory, the Power LED switch is set to the PWR position. The Front Power LED will illuminate when the power switch is in the ON position and the unit is not in Standby.
- In the "OFF" position, the Front Power LED will not illuminate. This setting is recommended in applications where the Front Power LED may be visually objectionable while the unit is operating.
- In the LIMIT setting the Front Power LED will track the LIMIT LED on the rear of the unit. When the K Series is in Limiting (meaning that one or more of the limiters is engaging to protect some part of the system) the Front Power LED will glow brighter in response to the limiting function. This allows the system operator to have awareness of the status of the limiters without needing to see the rear of the unit. For more information see the section below on the Rear LIMIT LED. When not in limiting and when the unit is not in standby, the front power LED will be illuminated dimly.

Rear LIMIT LED

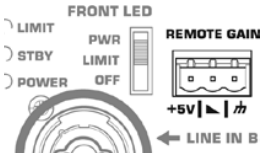
The red LIMIT LED can indicate that limiting has taken place to protect and avoid damage to the amplifier or loudspeaker. (Figure 12) If the signal level at any frequency is too high, the DSP will limit the signal to prevent damage and the red LIMIT LED will illuminate. If the amplifier is too hot because the SPL is too high or the environment is too hot, the red LIMIT LED will be illuminated. If the red LIMIT LED is on when both Gain controls are at minimum, your K Series loudspeaker requires service by qualified personnel.



– Figure 12 –

Remote Gain Attenuator

A 3 pin "Euro" connector has been provided to adjust the volume of the K Series loudspeaker or put the system into standby. (Figure 13) By varying the voltage on the ◣ pin between +5V (provided on +5V pin) and ground (⏚ pin), the volume can be linearly controlled. The voltage on the ◣ pin can be created by using a potentiometer or provided from an external source. Many K Series systems can be controlled from a single potentiometer by connecting the ◣ pins of multiple K Series speakers together.



– Figure 13 –

A relay or manual connection can be made between the ◣ pin and the ⏚ pin to put the K Series system into standby mode after 5 minutes.

WARNING: Do not put more than +5V or less than ground on the ◣ pin or else damage may occur. Do not connect the ◣ pin directly to the +5V pin.

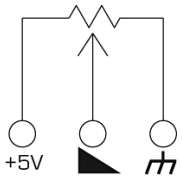
Schematics of Proper Wiring for Gain Attenuator

When using a single potentiometer for one loudspeaker. (Figure 14)

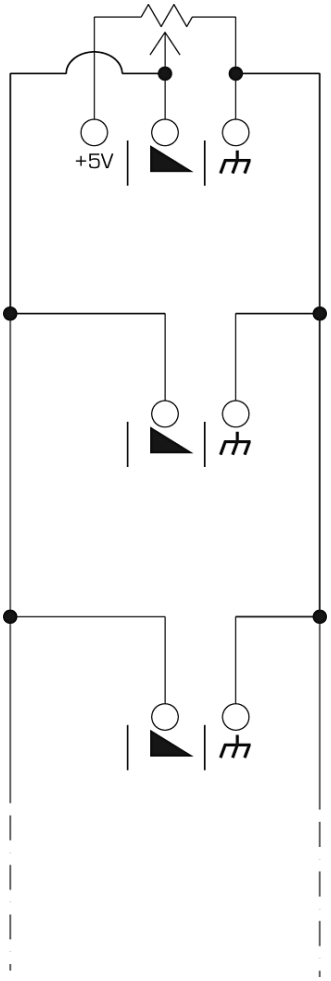
When using a single potentiometer for multiple loudspeaker. (Figure 15)

Wiring to the 3 pin "Euro" connector. (Figure 16)

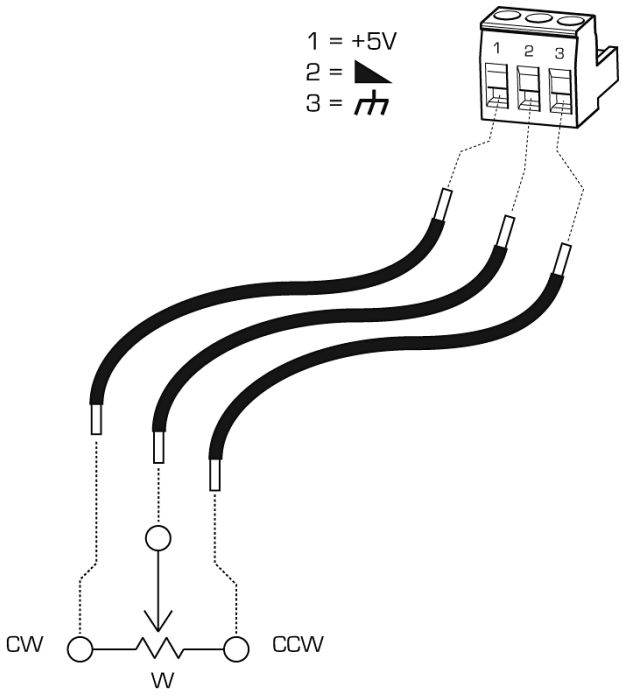
– Figure 14 –



– Figure 15 –

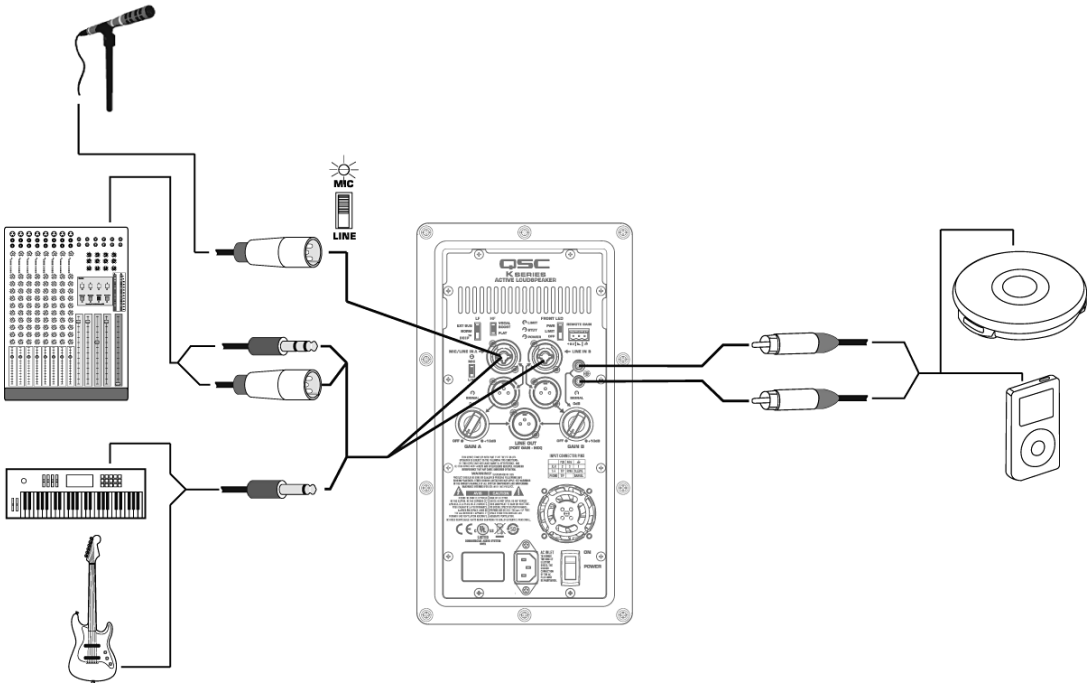


– Figure 16 –

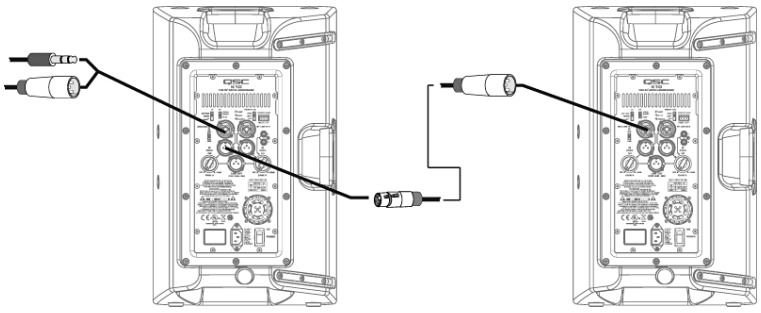


Applications

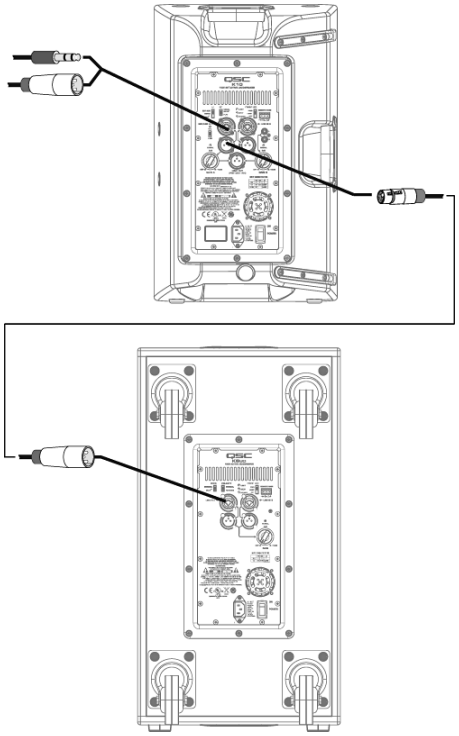
Input Hookup

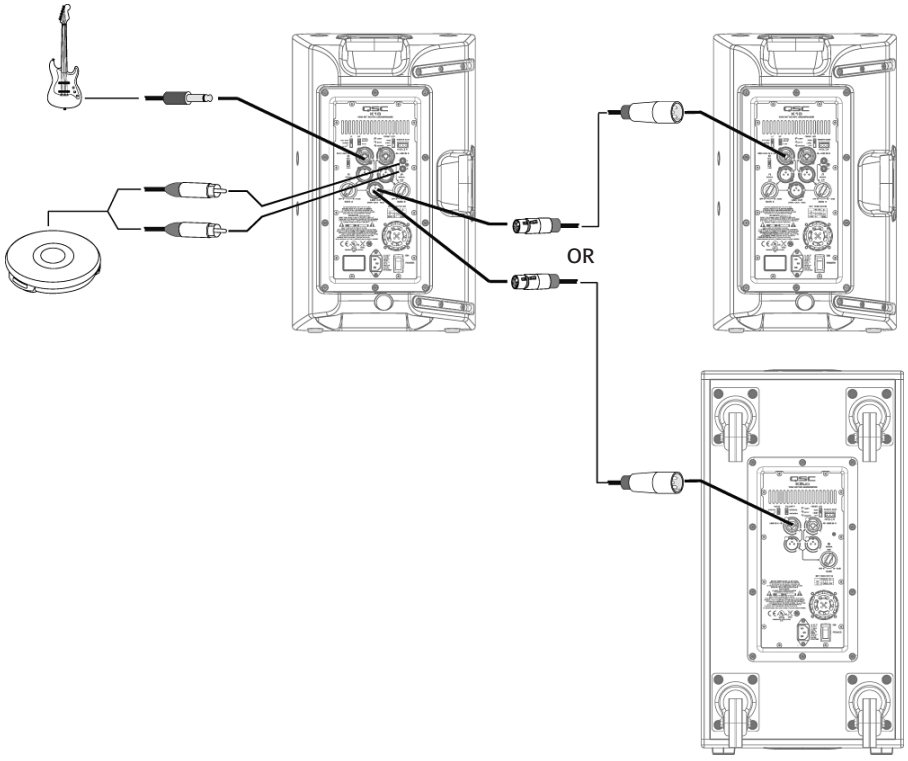


Output Hookup

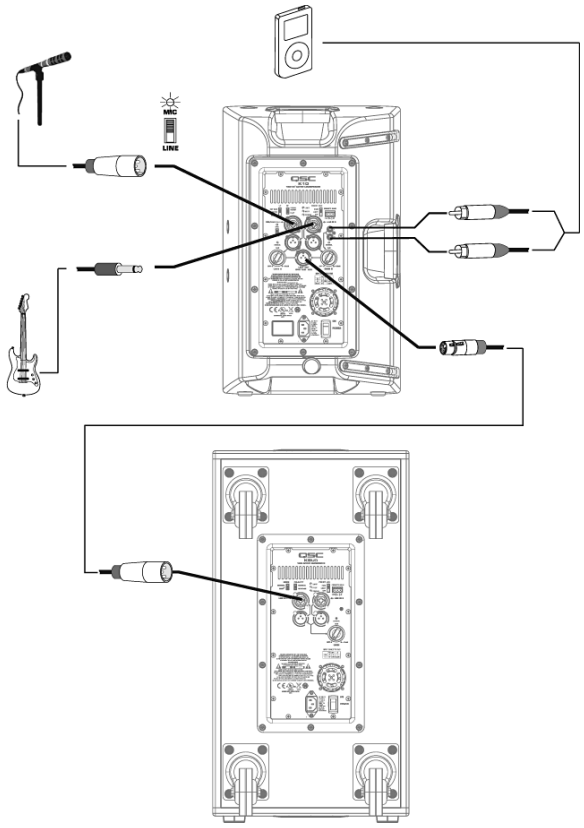


Output Hookup

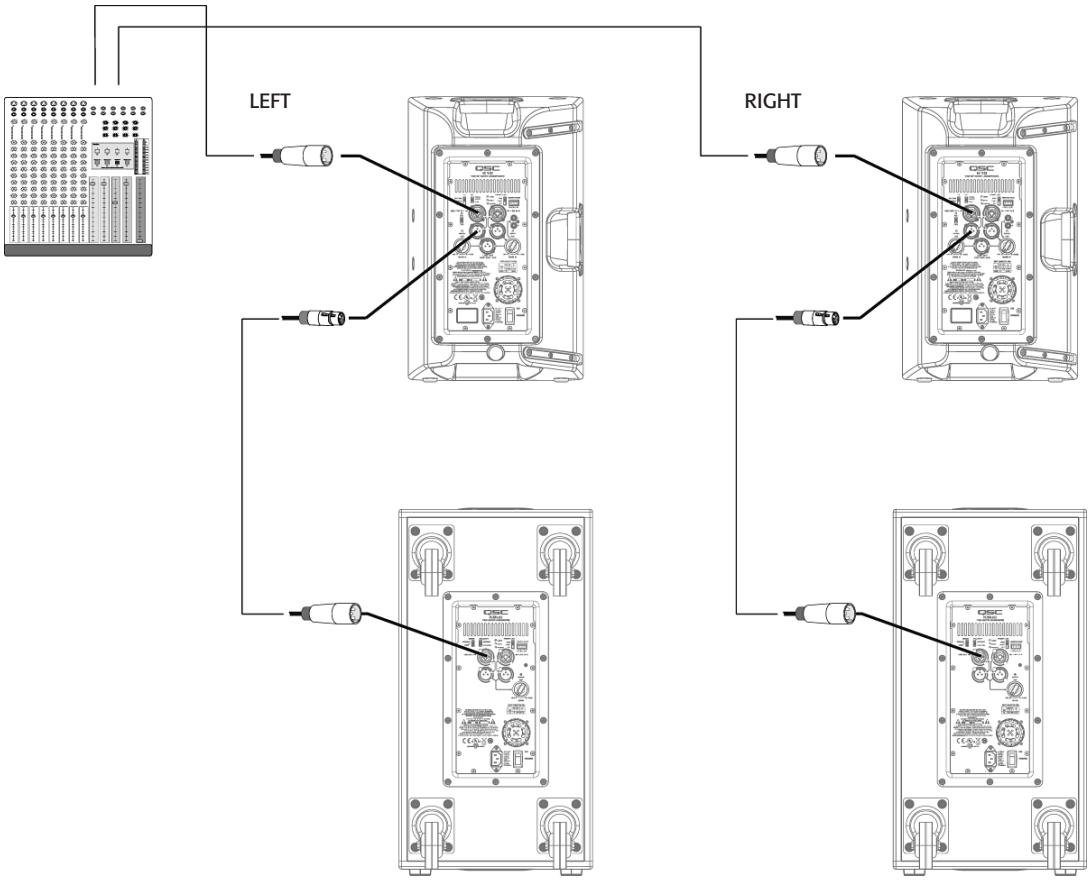




Common Standalone Small System (Mono)

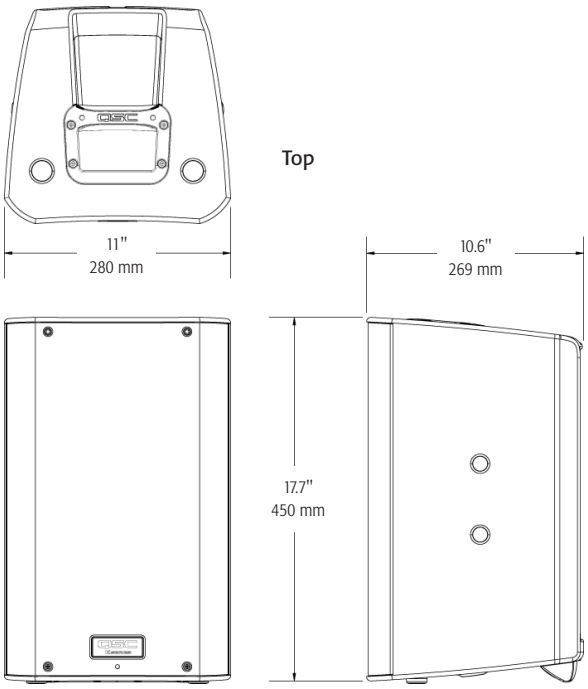


Common Stereo System

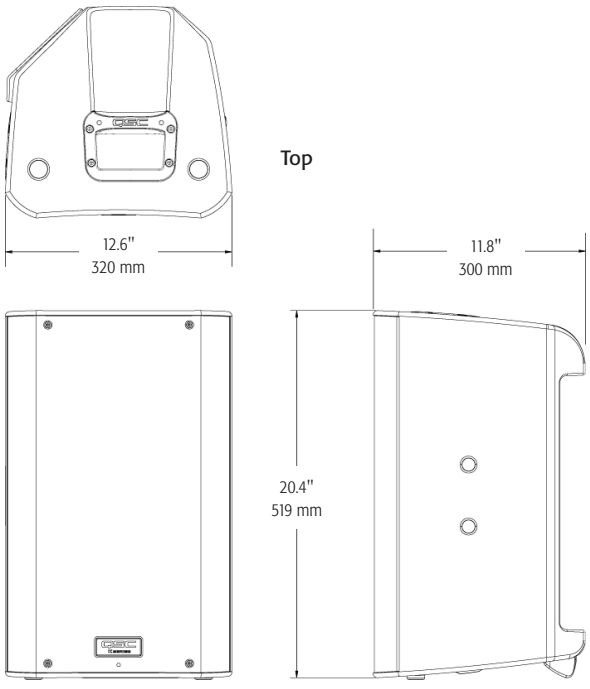


Dimensions

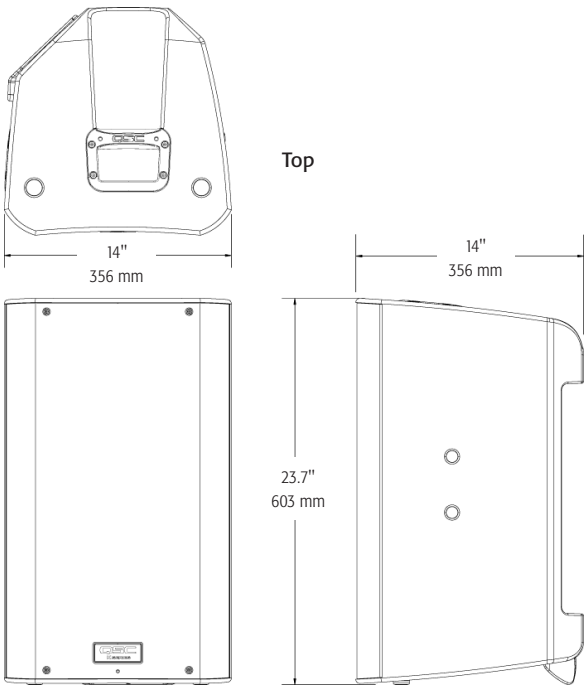
K8



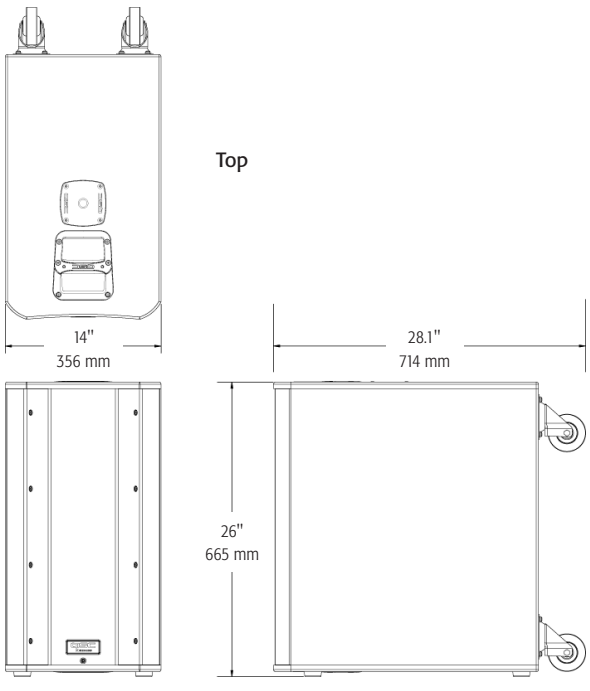
K10



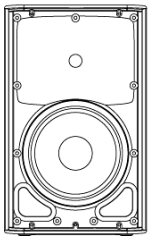
K12



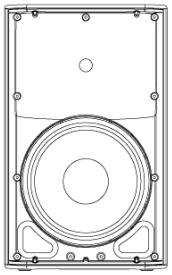
KSub



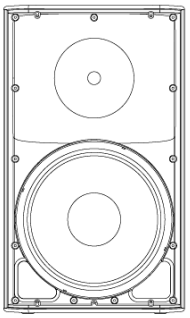
Specifications



K8



K10



K12

KSub

	K8	K10	K12	KSub
Configuration	Trapezoidal 2-way	Multipurpose 2-way	Multipurpose 2-way	4th Order Bandpass
Transducers				
Low-frequency	8" cone transducer	10" cone transducer	12" cone transducer	2 x 12" cone transducers
High-frequency	1.75" diaphragm compression driver	1.75" diaphragm compression driver	1.75" diaphragm compression driver	
Frequency Response (-6 dB)	66 Hz – 18 kHz	60 Hz – 18 kHz	52 Hz – 18 kHz	48 Hz – 134 Hz
Frequency Range (-10 dB)	61 Hz – 20 kHz	56 Hz – 20 kHz	48 Hz – 20 kHz	44 Hz – 148 Hz
Nominal Coverage (-6 dB)	105° conical	90° conical	75° conical	
Maximum SPL (1 meter)	127 dB peak	129 dB peak	131 dB peak	130 dB peak
Amplifiers				
Power Output	1000 W Class D			
Input Impedance (Ω)	XLR/ ¼": 40k balanced/20k unbalanced • XLR/ ¼" MIC mode: 2260 balanced • RCA: 10k			
Controls	Power • Gain A • Gain B • Mic/Line • LF Mode (Ext Sub/Norm/DEEP™) • HF Mode (Flat/Vocal Boost) Front LED (On/Off/Limit)			Power • Gain • LF Mode (Normal/ DEEP™) • Polarity (Normal/Reverse) • Front LED (On/Off/Limit)
Indicators	Power • Signal A • Signal B • Standby • Limit • Mic			Power • Signal • Standby • Limit
Connectors	Balanced female XLR/ ¼" line/mic level input • Balanced female XLR / ¼" line level input • Dual Balanced male XLR full range line level out • Balanced male XLR "mix" out • Stereo RCA line level input • Remote gain control • Locking IEC power connector			Dual balanced female XLR/ ¼" line level input • Dual Balanced male XLR full range line level out • Remote gain control • Locking IEC power connector
Cooling	On demand, 50 mm variable speed fan			
Amplifier Protection	Thermal limiting • Output overcurrent • Overtemperature muting • GuardRail™			
Transducer Protection	Thermal limiting • Excursion limiting			
AC Power Input	Universal power supply 85 – 265 VAC, 50 – 60 Hz			
AC Power Consumption 1/8 Power	100 VAC, 2.3 A • 120 VAC, 2.01 A • 230 VAC, 1.13 A			
Enclosure	Impact resistant ABS			Painted birch plywood
Finish	Black Paint			Black textured paint
Grille	Black powder coated 18 gauge steel			
Dimensions (HWD)	17.7" x 11" x 10.6" 450 mm x 280 mm x 269 mm	20.4" x 12.6" x 11.8" 519 mm x 320 mm x 300 mm	23.7" x 14" x 14" 603 mm x 356 mm x 356 mm	26" x 14" x 28.1" (including casters) 665 mm x 356 mm x 714 mm
Weight (Net)	27 lb (12.2 kg)	32 lb (14.5 kg)	41 lb (18.6 kg)	74 lb (33.6 kg)
Available Accessories	K8 TOTE • K8 YOKE • K SERIES M10 KIT	K10 TOTE • K10 YOKE • K SERIES M10 KIT	K12 TOTE • K12 YOKE • K SERIES M10 KIT	KSub COVER

Specifications subject to change without notice.

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